Reaching Beyond the Medication Bottle:

Massage Therapy as an Effective Intervention for Agitation in Elderly with Dementia

Karen A. Totton

Atlantic College of Therapeutic Massage

June 06, 2005

This paper was published as:
"Massage Therapy as an Intervention for Agitation in Elderly Persons with Dementia"
in the Journal of Soft Tissue Manipulation, Vol. 13 (Fall 2005).

Introduction

In their most recent publication of estimated prevalence of dementia in our country, the Alzheimer Society of Canada indicated that 1 in 13 Canadians over 65 years of age is currently affected by dementia (*Canadians affected by Alzheimer Disease and related dementias*). Even more staggering is the forecast that in 25 years, it is expected over 3/4 million people will have dementia (Ibid). Of those with dementia, approximately half will continue to reside at home while the other half will reside in long-term care (LTC) facilities (*Patterns of caring for people with dementia in Canada*, Alzheimer Society of Canada). The implications of having a significant portion of the elderly population not only experiencing dementia, but also living in LTC facilities, are numerous. Researchers have argued the most basic implication deals with maintaining an individual's quality of life in the late stages of cognitive decline in an institutional setting (Cohen-Mansfield, 2001; Trombley, Thomas, & Mosher-Ashley, 2003).

Traditionally, health professionals have relied upon neuroleptic medications to manage the unpredictable behaviours which usually accompany functional and cognitive declines (Remington, 2002; Smallwood et al., 2001; Vanderbilt, 2000). However, there is growing recognition in the psychiatric community that neuroleptic medication used to manage agitation in elderly people with dementia impacts their quality of life given the serious side effects which include hastened cognitive decline and paradoxically, increased agitated behaviours (Carlson et al., 1995, as cited in Remington, 2002; Mcshane et al., 1997 as cited in Smallwood et al., 2001).

As a result, demand from family and health care professionals for a non-pharmacologic approach to reduce agitation without negatively impacting the quality of life of elderly living in LTC facilities has led to research in the area of complementary therapies. Massage therapy, despite having been in practice for centuries, has only gained attention and been the focus on clinical trials in recent years (Remington, 2002; Smallwood et al., 2001; Snow, Hovanec, & Brandt, 2004).

This paper explains what dementia is; briefly review the types of agitation which are associated with dementia; describes three studies which have examined how massage affects agitation and summarize their findings. The paper concludes by examining areas for future research.

Dementia

Dementia is often understood by the public as a disease that affects people in old age, primarily causing memory problems. A more accurate description of dementia is of a syndrome, a combination of signs and symptoms associated with another disease or pathology, that predominantly affects the elderly population (*Related dementias*, Alzheimer Society of Canada). Some of the common signs and symptoms which are present with dementia are memory loss, impaired judgement, difficulties in reasoning, and changes in mood and behaviour.

There are various conditions which can cause dementia-like symptoms but are treatable such as depression, vitamin deficiency, and infections (*Related dementias*, Alzheimer Society of Canada). Unfortunately, there are other conditions for which no known effective treatment exists to halt cognitive decline and restore functioning. These conditions include Alzheimer Disease, transient ischemic attacks, Parkinson's Disease, vascular accidents, and Creutzfeldt-Jakob Disease (Ibid), all of which typically result in permanent deterioration in functioning. Of these conditions, Alzheimer Disease is the most common form of dementia in Canada and is currently estimated to account for 64 per percent of all dementias (*Canadians affected by Alzheimer Disease and related dementias*, Alzheimer Society of Canada).

Even though no single aspect of dementia can be identified as the most difficult to deal with, caregivers and family members of the client with dementia often agree the changes in behaviour which accompany dementia can be one of the most challenging aspects to deal with (Vanderbilt,

2000). Agitation, one of the changes in behaviour often observed, will be discussed in the next section.

Agitation

Cohen-Mansfield (2001) describes agitation as behaviours that can be present in both cognitively intact and impaired individuals. When observed in an individual with dementia who is cognitively impaired, the agitation usually stems from deficits in their ability to communicate needs as well as the caregiver's lack of accurate interpretation (Cohen-Mansfield, 2001). The resulting frustration and agitation with not being heard can be displayed in a variety of ways. Cohen-Mansfield categorizes the ways agitation can be displayed into three main types: physically aggressive behaviours, physically non-aggressive behaviours, and verbally agitated behaviours (2001). Examples of physically aggressive behaviours include hitting and pushing while physically non-aggressive behaviours may involve pacing a hallway or hand wringing. Verbally agitated behaviours include yelling, screaming, and perseveration of thought (repeating the same words or sentence over and over).

An interesting correlation between the type of agitation and the extent of cognitive decline was noted by Cohen-Mansfield (2001) in her research. She found that verbally agitated behaviours are more prevalent in the early and middle stages of dementia when verbal capabilities are still intact but the ability to use them appropriately is diminished (Ibid). Physically aggressive behaviours are often observed in the late stages of dementia when verbal capabilities are significantly impaired or completely lost, leaving the client without any other means of communication (Ibid).

At any given time in a LTC facility that provides care for residents with dementia, these types of agitated behaviours are present. The extent of distress and negative impact upon quality of life varies from client to client, however, there is consensus that the effective management of agitation does improve quality of life for the resident with dementia (Remington, 2002; Snow et al., 2004). Although pharmacologic intervention has historically been the backbone of most therapeutic plans to reduce agitation, there are complementary methods being explored, one of which is massage. In the next section, literature will be reviewed that explores the role of massage as a complementary therapy to manage agitation.

Literature Review

In the first study, the researcher examined how two variables, calming music and hand massage, impacted agitated behaviours in elderly persons with dementia.

STUDY ONE: CALMING MUSIC AND HAND MASSAGE

Objective

Remington (2002) conducted a study to determine whether intervening with calming music and hand massage would result in a reduction in agitated behaviours among elderly with dementia. The framework used by the researcher for the study was based on the premise that stressful environmental stimuli are responsible for agitated behaviours. It was hypothesized that if performing hand massage could alter the environmental stimuli, agitation would be subsequently reduced (Remington, 2002).

The hand was chosen in this study as the area to massage for two reasons by the researcher. First, hand massage does not require the removal of clothing, a task that could be impractical for an elderly person who is displaying agitated behaviour and experiencing dementia. Second, massaging the hand is viewed as less threatening than other types of massage by elderly with dementia because it is a socially familiar type of touch, even to elderly in the more severe stage of their dementia (Remington, 2002). For these two reasons, the researcher felt the hand-type of massage would be

less likely to provoke further agitation or evoke unpleasant memories thereby confounding the trial than would other types of massage (Ibid).

Methods

For this study, 68 residents from four different LTC facilities were selected based on the criteria that they had been diagnosed with a cognitive impairment in which dementia was a major symptom (Alzheimer Disease, multi-infarct dementia, or senile dementia) and were observed displaying agitated behaviours on several occasions by LTC facility staff prior to the trial (Remington, 2002).

The participants were randomly assigned to one of four intervention groups: calming music, hand massage, calming music and hand massage, or control. The interventions lasted for 10 minutes, with the exception of the control group that received no treatment during the intervention period. The behaviours of the participants were recorded using an inventory devised to rate agitation at four different time intervals: immediately prior to, during, immediately after, and one hour after the treatment. The recorded scores were then analyzed to determine whether differences in agitated behaviours occurred (Remington, 2002).

Results

The results of the study found that while no differences in physically aggressive behaviours were noted with the interventions, there were differences observed in both physically non-aggressive and verbally agitated behaviours. Physically non-aggressive behaviours and verbally agitated behaviours were documented as having decreased in all three treatment groups, however, the most significant reduction was noted in the hand massage treatment condition (Remington, 2002). Surprisingly, the combination group (hand massage and calming music simultaneously) did not yield any additional benefits in comparison to the two treatments performed independently (Ibid).

The researcher concluded that hand massage was found to be an effective intervention to reduce agitation among LTC facility residents with dementia. Remington (2002) expanded upon the results by noting, "CM [calming music] and HM [hand massage] represent practical treatment options that can be used alone or to augment an individualized therapeutic regimen." (p. 322). In light of this study, massage can be viewed as a complementary therapy in the true sense as it does work in partnership with the other aspects of a resident's plan of care.

In the next study, the researchers examined whether massage impacted agitated behaviours when performed in conjunction with aromatherapy.

STUDY TWO: AROMATHERAPY AND MASSAGE

Objective

Smallwood et al. (2001) sought to establish the relaxation effects of lavender essential oil and massage on agitated behaviours in elderly with dementia. The framework used was not based on the premise of altering environmental stimuli as in Remington's (2002) study. Instead, the researchers considered the strong results of past research that indicated aromatherapy plays a therapeutic role in managing dementia and related agitated behaviours (Brooker et al., 1997, as cited in Smallwood et al., 2001). The researchers hypothesized that using the specific aroma of lavender would produce relaxation effects and therefore reduce agitated behaviours among elderly with dementia (Smallwood et al., 2001).

Methods

Smallwood et al. (2001) gathered 21 inpatients from a general hospital unit to participate in their study. The inclusion criteria were that participants were 65 years of age or older and had been

diagnosed with a dementia. The researchers did not seek out the cause of dementia unlike the previous study conducted by Remington (2002). In addition, each participant was also screened for his or her suitability to receive aromatherapy and was recorded by video camera as having displayed agitated behaviour prior to the trial (Smallwood et al., 2001). Although hospital staff recorded the agitated behaviours of the participants in a similar manner as Remington's study (2002), the behaviours were scored using a different inventory.

For the trial, the participants were randomly allocated to one of three intervention groups: aromatherapy massage, plain oil massage, and conversation with aroma administered by diffuser (Smallwood et al., 2001). The behaviours of the participants were recorded using the same inventory as pre-trial at four different times during the day following treatment: 10-11am, 11-12am, 2-3pm, and 3-4pm. Those scores were then analyzed to determine whether differences in agitated behaviours occurred (Ibid).

Although the area of body massaged and the duration of the individual treatments were not described by the researchers, they did design the study so the same aromatherapist gave the treatments in the aromatherapy massage condition to maintain consistency in the results (Smallwood et al., 2001).

Results

The results of the study found the aromatherapy and massage treatment condition resulted in the greatest reduction of agitated behaviours compared to the plain oil massage, and the conversation with aroma treatment. The scores reflected the time of day during which the most significant decreases in agitation occurred was from 3-4pm with the aromatherapy and massage condition (Smallwood et al., 2001). While the results of this study appear to very clearly illustrate the effectiveness of aromatherapy and massage in decreasing agitation among elderly people with dementia, the researchers cautiously pointed out that, "The small sample size does not have sufficient statistical power to generate robust results and replication is therefore recommended." (Ibid, p. 1012). Nonetheless, they concluded their results, although in a small sample, do provide for evidence that aromatherapy and massage offers an alternative to traditional means of managing agitation that is both low cost and low risk of negative side effects (Ibid).

In the final study, the researchers conducted a study in which 3 types of aromatherapy were tested to determine whether non-cutaneous application would influence agitated behaviours among elderly with dementia and whether massage is an important aspect of the use of aromatherapy in this population.

Study Three: Aromatherapy Without Cutaneous Application
Objective

The framework used by the researchers for the study was based on the premise that while past research studies have proven the effectiveness of massage coupled with another variable (Ballard et al., 2002 as cited in Snow et al., 2004; Remington, 2002; Smallwood et al., 2001) and for massage to be proven effective in a stand-alone trial, the other variables must also be examined independently. The researchers hypothesized that aromatherapy administered without touch would not be as effective in decreasing agitation among elderly with dementia due to their impaired olfactory abilities (as established by neuropsychological research) as aromatherapy would be if administered via massage (Snow et al., 2004).

Methods

Seven participants aged 65 years or older were chosen for this study, all from the same LTC facility that provided care exclusively to elderly with dementia. Each participant was considered by

the nursing staff to have probable Alzheimer Disease (Snow et al., 2004) since confirmed diagnosis cannot be made until a post-mortem is conducted. Unlike the study performed by Smallwood et al., (2001), the researchers in this study did not disclose whether they screened each participant for his or her suitability to receive aromatherapy (Snow et al., 2004). In a design consistent with the previous two trials (Remington, 2002; Smallwood et al., 2001), the participants were observed displaying agitated behaviours prior to the start of the study (Snow et al., 2004).

The participants received three aromatherapy conditions over the 16-week evaluation period: lavender oil, thyme oil, and unscented grape seed oil. The aromatherapy was administered by applying two drops of the undiluted oil onto a piece of fabric that was then attached to the collar of the participants' shirts (Snow et al., 2004). This application was repeated three times during the day at the same time for all the participants. The researchers noted that to eliminate cross-aroma contamination, each participant received the same aromatherapy condition in the same order (Ibid).

The behaviours of the participants were recorded every other day during the trials using the same inventory used by Remington (2002). Nurses and nursing assistants compiled their observations of the participants using the inventory; their recordings were then analyzed by the researchers to determine whether differences in agitation occurred (Snow et al., 2004).

Results

The results of the study found that none of the aroma conditions produced a decrease in agitated behaviours in the participants (Snow et al., 2004). These results were surprising given the established relaxing effect of lavender (Zailmann et al., 2003, as cited in Snow et al., 2004). The implications of this unpredicted outcome were not overlooked by the researchers. They concluded that, "…cutaneous application of the essential oil may be necessary to achieve treatment effects." (Snow et al., 2004, p. 435).

Discussion

While the researchers of this study do not clearly state that cutaneous application specifically refers to massage as the method of application, if all three studies are analyzed together, I feel massage is clearly indicated as a key factor in reducing agitation.

First, past studies have established the olfactory functioning abilities of elderly persons with dementia are drastically impaired, especially in the Alzheimer-type of dementia (Murphy et al., 1990; Rezek, 1987, all as cited in Snow et al., 2004). Second, results of studies in which aromatherapy alone was administered, participants demonstrated no decrease in agitated behaviours (Snow et al., 2004) which re-confirms the impairment of elderly persons' olfactory abilities. Third, studies in which elderly participants received aromatherapy and massage simultaneously resulted in a positive outcome of reducing agitation (Smallwood, 2001). Finally, studies in which participants received massage alone still produced a decrease in agitation (Remington, 2002; Rowe & Alfred, 1999). Therefore, I believe there is strong empirical evidence that massage is effective in reducing agitated behaviours among elderly persons with dementia.

FUTURE RESEARCH

In the future, research could be conducted in several areas to further the understanding of how massage affects agitation among elderly people with dementia. Studies which investigate whether varying the specific techniques or time of the day the treatment is given, could prove to expand our knowledge and subsequently impact the way in which interventions are performed.

Another important question is whether massage could be incorporated into a community-based healthcare plan given that not all elderly persons with dementia live in LTC facilities. As established by the Alzheimer Society of Canada, approximately 50 per cent of the people with

dementia live in the community and receive both informal and formal care (*Patterns of caring for people with dementia in Canada*). Extra-mural nurses and home health workers may be able to offer their agitated clients, and families, an additional service if they were to undertake massage training.

As well, there needs to be more research completed in the area as to whether managing agitation with massage is an economically viable route for LTC facilities to take in comparison to therapeutic practices already in place. Questions such as: Is it cost effective for LTC facilities to train their existing staff members in the field of massage?; Would it be more cost effective to have a Registered Massage Therapist on staff to perform treatments?; and Who is ultimately responsible for the costs if either route is taken? are all reasonable questions that would need to be carefully considered before LTC facilities in our province would commit to implementing the type of massage intervention for agitation described in the studies reviewed earlier.

Summary

As the population ages, forecasters predict that over 3/4 million Canadians will have a dementia of some type in just 25 years (*Canadians affected by Alzheimer Disease and related dementias*, Alzheimer Society of Canada). An unfortunate but common occurrence in dementia is agitated behaviour. Regardless of whether the agitation is verbal, physically non-aggressive, or aggressive, it has been demonstrated by the research studies reviewed earlier that reduction of agitated behaviour could have a significant impact upon the quality of life for those living with dementia in LTC facilities. Massage therapy has proven to be an effective intervention with no negative side effects noted in the trials conducted, when performed alone or in combination with another form of intervention such as music or aromatherapy. Thus, as the demand for non-pharmacologic treatments of agitation continues to grow, massage therapy will also continue to gain more recognition as a valuable component in the therapeutic management of dementia.

Works Cited

Alzheimer Society of Canada (n.d.) *Related dementias.* Retrieved 20 May 2005, from htttp://www.alzheimer.ca/english/disease/dementias-intro.htm

Alzheimer Society of Canada. (n.d.) *Canadians affected by Alzheimer Disease and related dementias.* Retrieved 20 May 2005, from http://www.alzheimer.ca/english/disease/stats-people.htm

Alzheimer Society of Canada. (n.d.) *Patterns of caring for people with dementia in Canada.* Retrieved 20 May 2005, from http://www.alzheimer.ca/english/disease/stats-caregiving.htm

Cohen-Mansfield, J. (2001 May/June). Managing agitation in elderly patients with dementia. *Geriatric Times.* Retrieved 20 May 2005, from http://www.geriatrictimes.com/g010533.html

Remington, R. (2002). Calming music and hand massage with agitated elderly. *Nursing Research, 51,* 317-323.

Rowe, M., & Alfred, D. (1999). The effectiveness of slow-stroke massage in diffusing agitated behaviors in individuals with Alzheimer's disease. *Journal of Gerontological Nursing, 25,* 22-34.

Smallwood, J., Brown, R., Coulter, F., Irvine, E., & Copland, C. (2001). Aromatherapy and behaviour disturbances in dementia: A randomized controlled trial. *International Journal of Geriatric Psychiatry, 16,* 1010-1013.

Snow, A.L., Hovanec, L., & Brandt, J. (2004). A controlled trial of aromatherapy for agitation in nursing home patients with dementia. *The Journal of Alternative and Complementary Medicine, 10,* 431-437.

Trombley, J., Thomas, B., & Mosher-Ashley, P. (2003, October). Massage therapy for elder residents: Examining the power of touch on pain, anxiety, and strength building. *Nursing Homes,* 92-98.

Vanderbilt, S. (2000 June/July). Reaching out: Massage emerges as a lifeline to dementia patients. *Massage & Bodywork.* Retrieved 20 May 2005 from http://www.massagetherapy.com/articles/index.php?articles_id=281